Lampiran 1.

Data Hasil Pengamatan

Cara	Lama	Ulangan	Vitamin_A	Gula_Reduksi	Air	Tekstur	Interaksi
1	1	1	567.098	1.362	66.006	1.2	1
1	1	2	567.67	1.417	63.179	1.1	1
1	1	3	580.902	1.307	64.478	1.2	1
2	1	1	567.098	1.362	66.006	1.2	2
2	1	2	567.67	1.417	63.179	1.1	2
2	1	3	580.902	1.307	64.478	1.2	2
3	1	1	567.098	1.362	66.006	1.2	3
3	1	2	567.67	1.417	63.179	1.1	3
3	1	3	580.902	1.307	64.478	1.2	3
1	2	1	694.762	3.307	68.794	3.4	4
1	2	2	722.628	3.637	69.96	3.6	4
1	2	3	665.414	4.057	68.452	3.3	4
2	2	1	612.082	2.513	65.936	1.9	5
2	2	2	586.536	2.549	65.26	1.7	5
2	2	3	619.076	2.738	65.871	1.8	5
3	2	1	614.819	2.365	65.089	1.5	6
3	2	2	617.175	2.478	65.17	1.7	6
3	2	3	605.459	2.424	65.551	1.6	6
1	3	1	840.354	9.547	70.337	15.3	7
1	3	2	842.974	9.742	71.968	15.6	7
1	3	3	833.408	10.324	71.514	15.8	7
2	3	1	740.417	6.256	67.49	8.4	8
2	3	2	796.944	5.437	67.229	8.9	8
2	3	3	799.48	6.006	68.016	9.1	8
3	3	1	807.315	6.568	67.592	10.2	9
3	3	2	819.834	6.295	69.851	9.4	9
3	3	3	815.434	6.05	68.962	9.7	9
1	4	1	1041.016	12.4	70.09	22.2	10
1	4	2	944.87	13.627	69.565	23.8	10
1	4	3	993.782	15.03	70.961	21.8	10
2	4	1	813.658	11.096	73.453	20.2	11
2	4	2	847.919	12.497	72.781	20.9	11
2	4	3	852.515	10.756	71.984	18.8	11
3	4	1	862.755	12.699	71.741	15.6	12
3	4	2	907.109	10.808	72.173	17.6	12
3	4	3	866.177	11.004	71.841	18.1	12
1	5	1	1053.659	14.052	72.817	26.7	13
1	5	2	1055.823	14.337	73.538	25.8	13
1	5	3	1062.321	13.689	71.372	27.6	13
2	5	1	916.465	16.501	74.152	30.5	14
2	5	2	846.092	15.966	75.394	31.3	14
2	5	3	913.272	15.9	75.025	32.4	14
3	5	1	893.751	14.031	72.691	29.8	15
3	5	2	972.154	14.499	76.877	28.2	15
3	5	3	922.034	15.125	74.206	28.6	15

Lampiran 2. SPSS

Univariate Analysis of Variance

Between-Subjects Factors

		Value Label	N
Cara	1,00	Karbit	15
	2,00	Daun Lamtoro	15
	3,00	Daun Pisang	15
Lama	1,00	0 hari	9
	2,00	2 hari	9
	3,00	4 hari	9
	4,00	6 hari	9
	5,00	8 hari	9

Tests of Between-Subjects Effects

Dependent Variable: Gula_Reduksi

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Cara	14,061	2	7,031	22,179	,000
Lama	1220,020	4	305,005	962,178	,000
Cara * Lama	34,216	8	4,277	13,492	,000
Error	9,510	30	,317		
Corrected Total	1277,807	44			

Post Hoc Tests

Cara

Homogeneous Subsets

Gula_Reduksi

Duncan[a,b]

Cara	N	Subset 1	Subset 2
Daun Pisang	15	7,2288	
Daun Lamtoro	15	7,4867	
Karbit	15		8,5223
Sig.		,219	1,000

Means for groups in homogeneous subsets are displayed.
Based on Type III Sum of Squares
The error term is Mean Square(Error) = ,317.

a. Uses Harmonic Mean Sample Size = 15,000.

b. Alpha = ,05.

Lama

Homogeneous Subsets

Gula_Reduksi

Duncan[a,b]

Lama	N	Subset 1	Subset 2	Subset 3	Subset 4	Subset 5
0 hari	9	1,3620				
2 hari	9		2,8964			
4 hari	9			7,3583		
6 hari	9				12,2130	
8 hari	9					14,9000
Sig.		1,000	1,000	1,000	1,000	1,000

Means for groups in homogeneous subsets are displayed.
Based on Type III Sum of Squares
The error term is Mean Square(Error) = ,317.

a. Uses Harmonic Mean Sample Size = 9,000.

b. Alpha = ,05.

Univariate Analysis of Variance

Between-Subjects Factors

		Value Label	N
Cara	1,00	Karbit	15
	2,00	Daun Lamtoro	15
	3,00	Daun Pisang	15
Lama	1,00	0 hari	9
	2,00	2 hari	9
	3,00	4 hari	9
	4,00	6 hari	9
	5,00	8 hari	9

Tests of Between-Subjects Effects

Dependent Variable: Vitamin_A

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Cara	71197,309	2	35598,654	58,936	,000
Lama	1007224,507	4	251806,127	416,882	,000
Cara * Lama	32751,092	8	4093,887	6,778	,000
Error	18120,688	30	604,023		
Corrected Total	1129293,595	44			

Post Hoc Tests

Cara

Homogeneous Subsets

Vitamin_A

Duncan[a,b]

		Subset		
Cara	N	1	2	3
Daun Lamtoro	15	737,3417		
Daun Pisang	15		761,3124	
Karbit	15			831,1121
Sig.		1,000	1,000	1,000

Means for groups in homogeneous subsets are displayed.
Based on Type III Sum of Squares
The error term is Mean Square(Error) = 604,023.

a. Uses Harmonic Mean Sample Size = 15,000.

b. Alpha = ,05.

Lama

Homogeneous Subsets

Vitamin_A

Duncan[a,b]

Lama	N	Subset 1	2	3	4	5
0 hari	9	571,8900				
2 hari	9		637,5501			
4 hari	9			810,6844		
6 hari	9				903,3112	
8 hari	9					959,5079
Sig.		1,000	1,000	1,000	1,000	1,000

Means for groups in homogeneous subsets are displayed.
Based on Type III Sum of Squares
The error term is Mean Square(Error) = 604,023.

a. Uses Harmonic Mean Sample Size = 9,000.

b. Alpha = ,05.

Univariate Analysis of Variance

Between-Subjects Factors

		Value Label	N
Cara	1,00	Karbit	15
	2,00	Daun Lamtoro	15
	3,00	Daun Pisang	15
Lama	1,00	0 hari	9
	2,00	2 hari	9
	3,00	4 hari	9
	4,00	6 hari	9
	5,00	8 hari	9

Tests of Between-Subjects Effects

Dependent Variable: Air

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Cara	2,328	2	1,164	1,078	,353
Lama	512,375	4	128,094	118,598	,000
Cara * Lama	64,321	8	8,040	7,444	,000
Error	32,402	30	1,080		
Corrected Total	611,427	44			

Post Hoc Tests

Cara

Homogeneous Subsets

Air

Duncan[a,b]

Cara	N	Subset 1
Daun Pisang	15	69,0271
Daun Lamtoro	15	69,0836
Karbit	15	69,5354
Sig.		,216

Means for groups in homogeneous subsets are displayed.
Based on Type III Sum of Squares
The error term is Mean Square(Error) = 1,080.

a. Uses Harmonic Mean Sample Size = 15,000.

b. Alpha = ,05.

Lama

Homogeneous Subsets

Air

Duncan[a,b]

Lama	N	Subset 1	2	3	4	5
0 hari	9	64,5543				
2 hari	9		66,6759			
4 hari	9			69,2177		
6 hari	9				71,6210	
8 hari	9					74,0080
Sig.		1,000	1,000	1,000	1,000	1,000

Means for groups in homogeneous subsets are displayed.
Based on Type III Sum of Squares
The error term is Mean Square(Error) = 1,080.

a. Uses Harmonic Mean Sample Size = 9,000.

b. Alpha = ,05.

Univariate Analysis of Variance

Between-Subjects Factors

		Value Label	N
Cara	1,00	Karbit	15
	2,00	Daun Lamtoro	15
	3,00	Daun Pisang	15
Lama	1,00	0 hari	9
	2,00	2 hari	9
	3,00	4 hari	9
	4,00	6 hari	9
	5,00	8 hari	9

Tests of Between-Subjects Effects

Dependent Variable: Tekstur

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Cara	36,369	2	18,185	39,898	,000
Lama	5043,499	4	1260,875	2766,424	,000
Cara * Lama	128,666	8	16,083	35,288	,000
Error	13,673	30	,456		
Corrected Total	5222,208	44			

Post Hoc Tests

Cara

Homogeneous Subsets

Tekstur

Duncan[a,b]

Cara	N	Subset 1	Subset 2	Subset 3
Daun Pisang	15	11,7000		
Daun Lamtoro	15		12,6267	
Karbit	15			13,8933
Sig.		1,000	1,000	1,000

Means for groups in homogeneous subsets are displayed.
Based on Type III Sum of Squares
The error term is Mean Square(Error) = ,456.

a. Uses Harmonic Mean Sample Size = 15,000.

b. Alpha = ,05.

Lama

Homogeneous Subsets

Tekstur

Duncan[a,b]

Lama	N	Subset 1	2	3	4	5
0 hari	9	1,1667				
2 hari	9		2,2778			
4 hari	9			11,3778		
6 hari	9				19,8889	
8 hari	9					28,9889
Sig.		1,000	1,000	1,000	1,000	1,000

Means for groups in homogeneous subsets are displayed.
Based on Type III Sum of Squares
The error term is Mean Square(Error) = ,456.

a. Uses Harmonic Mean Sample Size = 9,000.

b. Alpha = ,05.

Hasil Uji DMRT

Homogeneous Subsets

Gula_Reduksi

Duncan[a]

Interaksi	N	Subset for alpha = .05							
		1	2	3	4	5	6	7	8
C1L0	3	1,3620							
C2L0	3	1,3620							
C3L0	3	1,3620							
C3L2	3		2,4223						
C2L2	3		2,6000						
C1L2	3			3,6670					
C2L4	3				5,8997				
C3L4	3				6,3043				
C1L4	3					9,8710			
C2L6	3						11,4497		
C3L6	3						11,5037		
C1L6	3							13,6857	
C1L8	3							14,0260	
C3L8	3							14,5517	
C2L8	3								16,1223
Sig.		1,000	,702	1,000	,386	1,000	,907	,084	1,000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3,000.

Vitamin_A

Duncan[a]

Interaksi	N	Subset for alpha = .05								
		1	2	3	4	5	6	7	8	9
C1L0	3	571,8900								
C2L0	3	571,8900								
C3L0	3	571,8900								
C2L2	3	605,8980								
C3L2	3	612,4843								
C1L2	3		694,2680							
C2L4	3			778,9470						
C3L4	3			814,1943	814,1943					
C2L6	3				838,0307	838,0307				
C1L4	3				838,9120	838,9120				
C3L6	3					878,6803	878,6803			
C2L8	3						891,9430	891,9430		
C3L8	3							929,3130		
C1L6	3								993,2227	
C1L8	3									1057,2677
Sig.		,079	1,000	,089	,254	,064	,514	,072	1,000	1,000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3,000.

Air

Duncan[a]

Interaksi	N	Subset for alpha = .05					
		1	2	3	4	5	6
C1L0	3	64,5543					
C2L0	3	64,5543					
C3L0	3	64,5543					
C3L2	3	65,2700					
C2L2	3	65,6890					
C2L4	3		67,5783				
C3L4	3		68,8017	68,8017			
C1L2	3		69,0687	69,0687			
C1L6	3			70,2053	70,2053		
C1L4	3				71,2730	71,2730	
C3L6	3				71,9183	71,9183	
C1L8	3					72,5757	
C2L6	3					72,7393	
C3L8	3						74,5913
C2L8	3						74,8570
Sig.		,243	,106	,128	,065	,124	,756

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3,000.

Tekstur

Duncan[a]

Interaksi	N	Subset for alpha = .05									
		1	2	3	4	5	6	7	8	9	10
C1L0	3	1,1667									
C2L0	3	1,1667									
C3L0	3	1,1667									
C3L2	3	1,6000									
C2L2	3	1,8000									
C1L2	3		3,4333								
C2L4	3			8,8000							
C3L4	3			9,7667							
C1L4	3				15,5667						
C3L6	3					17,1000					
C2L6	3						19,9667				
C1L6	3							22,6000			
C1L8	3								26,7000		
C3L8	3									28,8667	
C2L8	3										31,4000
Sig.		,315	1,000	,090	1,000	1,000	1,000	1,000	1,000	1,000	1,000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3,000.

Lampiran 3. Foto Alat dan Bahan

Gb. Pisang raja nangka

Gb. Penimbangan daun pisang

Gb. Penimbangan daun lamtoro

Gb. Pemeraman dengan karbit

Gb. Pemeraman dengan daun pisang

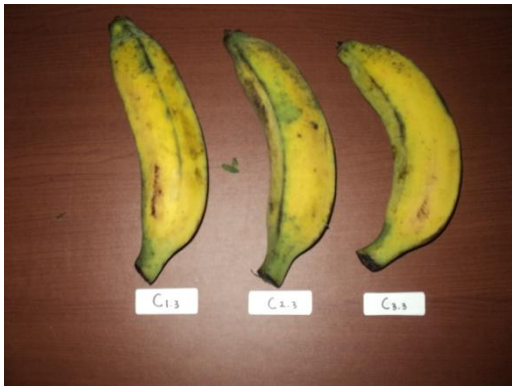
Gb. Pemeraman dengan daun lamtoro

Gb. Pemeraman dengan daun pisang

Gb. Pemeraman dengan daun lamtoro

Gb. Pemeraman dengan karbit (C1) daun lamtoro (C2) dan daun pisang (C3) masing-masing dengan tiga kali ulangan selama delapan hari

Gb. Hasil pemeraman selama 2 hari



Gb. Hasil pemeraman selama 4 hari

Gb. Hasil pemeraman selama 6 hari

Gb. Hasil pemeraman selama 8 hari

Gb. Spektrofotometer

Gb. Oven

Gb. Penetrometer

Gb. Tabung ukur

Gb. Tabung reaksi

Gb. Waterbath

Gb. Neraca analitik

Gb. Mortal-mortil labu ukur

Gb. Alat dan bahan: pipet ukur, karet hisap, tabung reaksi, aquades, reagen nelson, arsenomolybdat,

Gb. Kegiatan filtrasi

Gb. Pengambilan sampel

Gb. Kegiatan praktikum vitamin A dengan spektrofotometer

UNIVERSITAS MUHAMMADIYAH MALANG
LABORATORIUM KIMIA
Jl. Raya Tlogomas No. 246 Telp. 0341-464318 Psw. 152 Malang 65144

LAPORAN ANALISIS

No. Surat : 114 /LK-B/IV/2011

Contoh disampaikan oleh pelanggan dengan keterangan sebagai berikut:

Pelanggan	: **Moh. Fathul Anam** 04520012 Fakultas Sains dan Teknologi/Biologi Universitas Islam Negeri Maulana Malik Ibrahim Malang
Jenis Contoh	: Buah
Tgl. Penerimaan	: 30 Maret 2011
Analisis/Uji yang diminta	: Vitamin A, Gula reduksi, Air dan Tekstur
Metode Analisis	: - *Column chromatography* (Vitamin A) - *Nelson somogyi – Spectrophotometri* (Gula reduksi) - *Penetrometer* (Tekstur) - *Oven* (Air)
Hasil Analisis	: Terlampir

Malang, 26 April 2011

Kepala Laboratorium

Dr. Nurul Mahmudati, Dra, MKes

Lampiran Surat No. 114 /LK-B/IV/2011

1. Hasil Analisis Kimia Sampel Buah Pisang per 100 g bahan (Tahap 1)

Sampel	Ulangan	Vitamin A (SI)	Gula reduksi (g)	Air (%)	Tekstur (mm/50 g/5 dt)
Hari ke 0	1	567.098	1.362	66.006	1.2
	2	567.670	1.417	63.179	1.1
	3	580.902	1.307	64.478	1.2

2. Hasil Analisis Kimia Sampel Buah Pisang per 100 g bahan (Tahap 2)

Sampel	Ulangan	Vitamin A (SI)	Gula reduksi (g)	Air (%)	Tekstur (mm/50 g/5 dt)
Karbit 2	1	694.762	3.307	68.794	3.4
	2	722.628	3.637	69.960	3.6
	3	665.414	4.057	68.452	3.3
Daun Lamtoro 2	1	612.082	2.513	65.936	1.9
	2	586.536	2.549	65.260	1.7
	3	619.076	2.738	65.871	1.8
Daun Pisang 2	1	614.819	2.365	65.089	1.5
	2	617.175	2.478	65.170	1.7
	3	605.459	2.424	65.551	1.6

3. Hasil Analisis Kimia Sampel Buah Pisang per 100 g bahan (Tahap 3)

Sampel	Ulangan	Vitamin A (SI)	Gula reduksi (g)	Air (%)	Tekstur (mm/50 g/5 dt)
Karbit 4	1	840.354	9.547	70.337	15.3
	2	842.974	9.742	71.968	15.6
	3	833.408	10.324	71.514	15.8
Daun Lamtoro 4	1	740.417	6.256	67.490	8.4
	2	796.944	5.437	67.229	8.9
	3	799.480	6.006	68.016	9.1
Daun Pisang 4	1	807.315	6.568	67.592	10.2
	2	819.834	6.295	69.851	9.4
	3	815.434	6.050	68.962	9.7

Lanjutan Lampiran Surat No. 114 /LK-B/IV/2011

4. Hasil Analisis Kimia Sampel Buah Pisang per 100 g bahan (Tahap 4)

Sampel	Ulangan	Vitamin A (SI)	Gula reduksi (g)	Air (%)	Tekstur (mm/50 g/5 dt)
Karbit 6	1	1041.016	12.400	70.090	22.2
	2	944.870	13.627	69.565	23.8
	3	993.782	15.030	70.961	21.8
Daun Lamtoro 6	1	813.658	11.096	73.453	20.2
	2	847.919	12.497	72.781	20.9
	3	852.515	10.756	71.984	18.8
Daun Pisang 6	1	862.755	12.699	71.741	15.6
	2	907.109	10.808	72.173	17.6
	3	866.177	11.004	71.841	18.1

5. Hasil Analisis Kimia Sampel Buah Pisang per 100 g bahan (Tahap 5)

Sampel	Ulangan	Vitamin A (SI)	Gula reduksi (g)	Air (%)	Tekstur (mm/50 g/5 dt)
Karbit 8	1	1053.659	14.052	72.817	26.7
	2	1055.823	14.337	73.538	25.8
	3	1062.321	13.689	71.372	27.6
Daun Lamtoro 8	1	916.465	16.501	74.152	30.5
	2	846.092	15.966	75.394	31.3
	3	913.272	15.900	75.025	32.4
Daun Pisang 8	1	893.751	14.031	72.691	29.8
	2	972.154	14.499	76.877	28.2
	3	922.034	15.125	74.206	28.6

Malang, 26 April 2011

Analis,

Muhammad Ariesandy, SP